



EAST KENTUCKY POWER COOPERATIVE

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DEC 07 2007

PUBLIC SERVICE  
COMMISSION

December 7, 2007

HAND DELIVERED

Ms. Elizabeth O'Donnell  
Executive Director  
Public Service Commission  
211 Sower Boulevard  
Frankfort, KY 40602

Re: PSC Administrative Case No. 2007-00477

Dear Ms. O'Donnell:

Please find enclosed for filing with the Commission in the above-referenced case an original and ten (10) redacted copies of the responses of East Kentucky Power Cooperative, Inc. ("EKPC") to the Commission's Appendix B Data Request, from the order in this case dated November 20, 2007. Attached to the responses is EKPC's Petition for Confidential Treatment of Information, relating to designated confidential information in the responses to Requests 1 and 3. One copy of this confidential information is enclosed on a CD-ROM.

Please note that a redacted set of EKPC's responses has been sent to the Commission's consultant in this case, Overland Consulting. Once a confidentiality agreement is executed with the consultant, EKPC will promptly transmit the confidential responses to Requests 1 and 3.

Finally, please note that the Commission's service list for this case lists Mr. Ronnie Thomas as the service party for EKPC. Mr. Thomas is the Plant Manager at EKPC's Dale Station, and is not the appropriate EKPC contact for this case. Please correct the service list to include James C. Lamb, EKPC Senior Vice President of Power Supply, and myself, as the parties to be served in this case.

Very truly yours,

Charles A. Lile  
Corporate Counsel

Enclosures

Cc: Service List  
Overland Consulting

4775 Lexington Road 40391  
P.O. Box 707, Winchester,  
Kentucky 40392-0707

Tel. (859) 744-4812  
Fax: (859) 744-6008  
<http://www.ekpc.coop>

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DEC 07 2007

PUBLIC SERVICE  
COMMISSION

**COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

**AN INVESTIGATION OF THE )  
ENERGY AND REGULATORY ) ADMINISTRATIVE  
ISSUES IN SECTION 50 OF ) CASE NO. 2007-00477  
KENTUCKY'S 2007 ENERGY ACT )**

**PETITION FOR CONFIDENTIAL  
TREATMENT OF INFORMATION**

Comes now the petitioner, East Kentucky Power Cooperative, Inc. ("EKPC") and, as grounds for this Petition for Confidential Treatment of Information (the "Petition"), states to the Public Service Commission (the "Commission") as follows:

1. This Petition is filed in conjunction with the filing of EKPC's responses to Requests Nos. 1 and 3 of the Commission's Appendix B Data Requests included in its order in this case dated November 20, 2007, and relates to confidential information contained in those responses that is entitled to protection pursuant to 807 KAR 5:001 Section 7 and KRS §61.878 (1) (c) 1 and related sections.

2. The designated confidential information in Response No. 1 to the Data Requests consists of the EKPC Strategic Plan and the Financial Forecast. These documents include detailed proprietary information concerning EKPC operations, cost reduction efforts, financial objectives, planning for system expansion, and other highly sensitive information which discloses EKPC's critical short and long-term business plans. Release of this sensitive information to the public, including EKPC business competitors,

vendors and suppliers, could seriously compromise EKPC's ability to successfully implement and pursue the various strategies discussed in the plan, which are critical to maintaining EKPC's financial stability. Failure to achieve the objectives encompassed by the Strategic Plan would increase EKPC's overall operating costs, which would lead to an unfair competitive disadvantage for EKPC in its efforts to compete with the power marketers, utilities and other entities that deal in the market for surplus bulk power, and to compete with other utilities in Kentucky for new industrial customers.

3. The confidential information in Response No. 3 to the Data Requests includes a wind resource project evaluation study prepared for EKPC by AWS Truewind, LLC, and a biomass availability study for EKPC's Cooper Power Station prepared by N. S. Harding and Associates. These are studies commissioned by EKPC to evaluate specific opportunities for the use of renewable resources, and may have continuing proprietary value to EKPC. As demand for renewable resources grows in Kentucky, EKPC will be competing with other utilities, and other non-utility businesses, for viable sources of renewable energy and fuels. Disclosure to the public of these studies could provide an unfair competitive advantage to those competing entities, which could increase the cost of, or limit EKPC's access to, such renewable resources. Increased costs of future projects using renewable resources or fuel supply would make EKPC less competitive with power marketers, utilities and other entities that deal in the market for surplus bulk power, and other utilities in Kentucky that compete with EKPC for new industrial customers, leading to an unfair competitive disadvantage for EKPC.

4. Along with this Petition, EKPC has enclosed a CD-ROM containing one copy of the confidential responses, in an envelope designated as containing confidential

information, and 10 copies of the complete responses, with the confidential information redacted. The identified confidential information is not publicly available outside of EKPC, except for confidential arrangements with the consultants involved in the preparation of the documents, and is distributed within EKPC only to persons with a need to use it for business purposes. It is entitled to confidential treatment pursuant to 807 KAR 5:001 Section 7 and KRS §61.878(1)(c) 1, for the reasons stated hereinabove, as information which would permit an unfair commercial advantage to competitors of EKPC if disclosed. The subject information is also entitled to protection pursuant to KRS §61.878(1)(c) 2 c, as records generally recognized as confidential or proprietary which are confidentially disclosed to an agency in conjunction with the regulation of a commercial enterprise.

WHEREFORE, EKPC respectfully requests the Public Service Commission to grant confidential treatment to the identified information and deny public disclosure of said information.

Respectfully submitted,



DAVID A. SMART



CHARLES A. LILE

P. O. BOX 707  
WINCHESTER, KY 40392-0707  
(859) 744-4812

ATTORNEYS FOR EAST KENTUCKY  
POWER COOPERATIVE, INC.

**CERTIFICATE OF SERVICE**

This is to certify that an original and 10 copies of the foregoing Petition for Confidential Treatment of Information in the above-styled case were delivered to the office of Elizabeth O'Donnell, Executive Director of the Public Service Commission, 211 Sower Boulevard, Frankfort, KY 40601, and copies were mailed to Parties of Record, this 7<sup>th</sup> day of December 2007.



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Charles A. Lile

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

|                                   |   |                            |
|-----------------------------------|---|----------------------------|
| <b>AN INVESTIGATION OF THE</b>    | ) |                            |
| <b>ENERGY AND REGULATORY</b>      | ) | <b>ADMINISTRATIVE</b>      |
| <b>ISSUES IN SECTION 50 OF</b>    | ) | <b>CASE NO. 2007-00477</b> |
| <b>KENTUCKY'S 2007 ENERGY ACT</b> | ) |                            |

**RESPONSES TO COMMISSION STAFF'S DATA REQUEST**  
**TO EAST KENTUCKY POWER COOPERATIVE, INC.**  
**DATED NOVEMBER 20, 2007**

**EAST KENTUCKY POWER COOPERATIVE, INC.**

**PSC ADMINISTRATIVE CASE 2007-00477**

**PUBLIC SERVICE COMMISSION REQUEST DATED 11/20/07**

East Kentucky Power Cooperative, Inc. (EKPC) hereby submits responses to the data requests contained in Appendix B to the Order of the Public Service Commission ("PSC") in this case dated November 20, 2007. Each response with its associated supportive reference materials is individually tabbed.

**COMMONWEALTH OF KENTUCKY**

**BEFORE THE PUBLIC SERVICE COMMISSION**

**IN THE MATTER OF:**

**AN INVESTIGATION OF THE )  
ENERGY AND REGULATORY ) ADMINISTRATIVE  
ISSUES IN SECTION 50 OF ) CASE NO. 2007-00477  
KENTUCKY'S 2007 ENERGY ACT )**

**CERTIFICATE**

**STATE OF KENTUCKY )  
 )  
COUNTY OF CLARK )**

William A. Bosta, being duly sworn, states that he has supervised the preparation of the responses of East Kentucky Power Cooperative, Inc. to the Public Service Commission Staff Data Requests contained in Appendix B in the above-referenced case dated November 20, 2007, and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

William A. Bosta

Subscribed and sworn before me on this 6<sup>th</sup> day of December, 2007.

Deagan S. Griffin  
Notary Public

My Commission expires: December 8, 2009



**EAST KENTUCKY POWER COOPERATIVE, INC.**

**PSC ADMINISTRATIVE CASE NO. 2007-00477**

**APPENDIX B**

**DATA REQUEST RESPONSE**

**COMMISSION STAFF'S DATA REQUEST DATED 11/20/07**

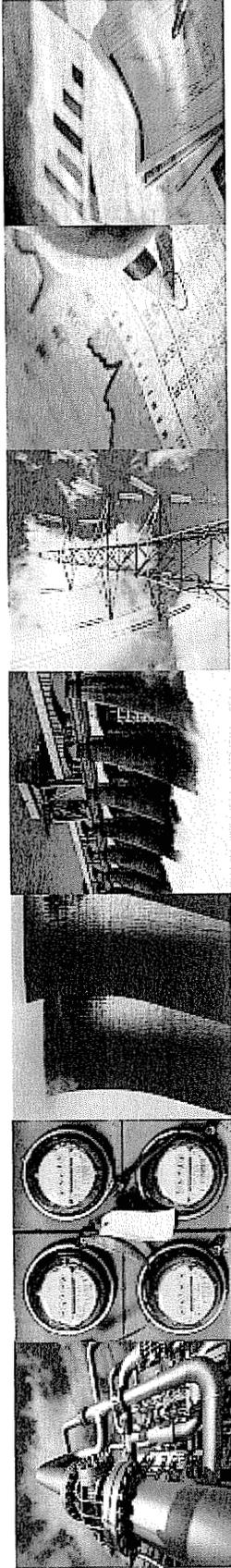
**REQUEST 1**

**RESPONSIBLE PERSON: James C. Lamb, Jr.**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 1.** Provide a copy of the most recent strategic plans and financial forecasts approved by the Board of Directors.

**Response 1.** The information is being provided on a CD under a request for confidentiality. The redacted cover sheets for these two documents are attached.



REDACTED

# EKPC Strategic Plan



EAST KENTUCKY POWER COOPERATIVE

**November 8, 2007**  
**Reflects North Star Savings**

**REDACTED**

**TWENTY-YEAR FINANCIAL FORECAST  
EQUITY DEVELOPMENT PLAN  
2007-2026**

**FEBRUARY 2007 (REVISED 2-14-07)**



**EAST KENTUCKY POWER COOPERATIVE, INC.**

**PSC ADMINISTRATIVE CASE NO. 2007-00477**

**APPENDIX B**

**DATA REQUEST RESPONSE**

**COMMISSION STAFF'S DATA REQUEST DATED 11/20/07**

**REQUEST 2**

**RESPONSIBLE PERSON: Frank J. Oliva**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 2.** Provide a copy of the most recent utility level and parent company rating agency reports from Moody's, Fitch's, and Standard & Poor's.

**Response 2.** East Kentucky Power Cooperative is not rated by any bond rating agency.



**EAST KENTUCKY POWER COOPERATIVE, INC.**

**PSC ADMINISTRATIVE CASE NO. 2007-00477**

**APPENDIX B**

**DATA REQUEST RESPONSE**

**COMMISSION STAFF'S DATA REQUEST DATED 11/20/07**

**REQUEST 3**

**RESPONSIBLE PERSON: James C. Lamb, Jr.**

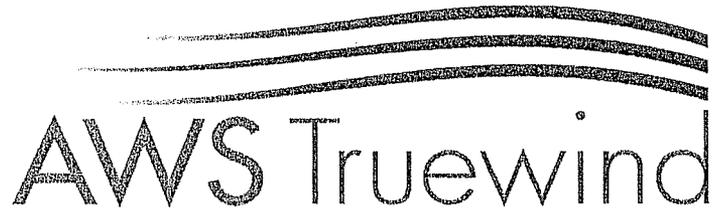
**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 3.** Provide copies of any internal reports or utility-commissioned studies on renewable capabilities in Kentucky, including capacity for development of integrated gasification combined cycle facilities.

**Response 3.** In 2005, EKPC commissioned AWS Truwind to provide a report summarizing potential wind generation at the Black Mountain Harlan County, KY site. This information is being provided on a CD under a request for confidentiality. The redacted cover sheet is attached.

In 2006, N. S. Harding & Associates performed a Biomass Resource Availability Study for EKPC's Cooper Station. This study was provided to EKPC by EPRI. This study is being provided on a CD under a request for confidentiality. The redacted cover sheet is attached.

**REDACTED**



**Estimation of the Wind Resource and  
Energy Production of the Proposed  
Black Mountain Wind Project**

*Prepared For:*

**East Kentucky Power Cooperative**

*Prepared By:*

**AWS TrueWind, LLC  
255 Fuller Road, Suite 274  
Albany, NY 12203**

Classification  
**CONFIDENTIAL**

Review Standard  
**SENIOR STAFF**

**January 9, 2006**



**REDACTED**

**N. S. HARDING & ASSOCIATES**

**PSC Request 3**

**Attachment 2**

**Page 1 of 21**

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**Biomass Resource Availability –  
East Kentucky Power Cooperative**

**N. S. Harding**  
*N. S. Harding & Associates*

**FINAL REPORT**

Submitted to:

**Mr. David C. O'Connor**  
*Electric Power Research Institute*

**Project No.**

**NSH 8048**

**May 2006**



**EAST KENTUCKY POWER COOPERATIVE, INC.**

**PSC ADMINISTRATIVE CASE NO. 2007-00477**

**APPENDIX B**

**DATA REQUEST RESPONSE**

**COMMISSION STAFF'S DATA REQUEST DATED 11/20/07**

**REQUEST 4**

**RESPONSIBLE PERSON: James C. Lamb, Jr./William A. Bosta**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 4.** Provide a review of existing demand-side management programs, with description which includes, at a minimum, the rate classification of customers eligible for each program, the date each program commenced, the current number of customers on each program, the technology being deployed, whether any third-party vendors are involved, the measurement and verification protocols being utilized, and the estimated annual energy savings.

**Response 4.** Existing DSM programs are described on Pages 1-5 of the attachment. All programs other than the Touchstone Energy programs and the Direct Load Control Pilot were established in the late 1980's or early 1990's. The Touchstone Energy Home and Touchstone Energy Manufactured Home programs and the Direct Load Control Pilot were established under the DSM statute and were initiated in the 2003-2007 time period. Pages 6-12 of the attachment show the number of participants and estimated annual energy savings for existing DSM programs. Page 13 of the attachment shows the estimated effect and estimated number of participants of a ramp-up of the Direct Load Control program. For measurement and verification purposes, the programs are evaluated on a three-year cycle.

In general, EKPC handles all aspects of these DSM programs. A third party vendor, Good Cents Solutions, is involved in the Direct Load Control Pilot.

### **Demand-Side Management Options**

EKPC and its Member Systems have had a variety of demand-side management programs in place over a number of years. Shown below is a list and description of demand response programs.

- **Tune-Up HVAC Maintenance Program**

This program is targeted to single-family homes using electric furnaces or electric heat pumps that have exhibited high-energy use. It is also available to multi-family residences, churches and commercial facilities heated by electric furnaces, electric heat pumps, and geothermal units. All facilities must have duct systems at least two years old to qualify for incentive payments.

This program includes cleaning indoor and outdoor heat-exchanger coils, changing filters, measuring the temperature differential across the indoor coil to determine proper compressor operation, checking the thermostat to verify operation and proper staging, measuring air flows to ensure proper conditioned air distribution, and sealing ductwork either through traditional mastic sealers or the Aeroseal duct sealing system. Duct losses are to be reduced to 10% or less. Duct loss measurement requires the use of a blower door test and the blower door subtraction method, or the approved duct loss measurement test associated with the Aeroseal duct sealing system. Only contractors trained and certified by EKPC may be used.

- **Geothermal Heating & Cooling Incentive Program**

The program is designed to encourage homeowners to choose geothermal heating and cooling over less-efficient forms of heating and cooling. For retail members building new homes, it works in conjunction with the Touchstone Energy Home building standards. For those retail members replacing existing, less-efficient HVAC equipment, the incentive encourages the consideration of geothermal as a viable HVAC solution.

The incentives are available to any residential retail member of participating EKPC cooperatives. Primary targets are retail members constructing new homes and retail member homeowners currently heating with electric furnaces, ceiling cables, baseboard heat or fossil fuels.

- **Electric Thermal Storage Incentive Program**

Electric Thermal Storage (ETS) provides retail members with a cost-efficient means of using electricity for space heating. The time-of-day rate for ETS energy encourages retail members to use heating energy off-peak rather than on-peak. The incentives are available to any retail member, but are primarily designed for retail members currently using baseboard, ceiling cable and electric furnaces as their primary source of heat. Secondary targets would be retail members using wood, coal or kerosene as primary or secondary sources of heat.

- **Electric Water Heater Incentive Program**

The electric water heater incentive is designed to encourage residential retail members engaged in new construction to choose a high-efficiency electric water heater over other available options. It is also designed to encourage retail members using a fossil-fuel water heater to convert to a high-efficiency electric water heater. By reducing the cost of choosing a high-efficiency water heater, cooperatives can contribute to lower long-term energy costs and improved satisfaction among residential retail members. The incentive is available to any residential retail member of a participating EKPC cooperative building a new home and installing that home's initial water heater. The incentive is also available to any residential retail member replacing an existing gas or propane water heater with an electric water heater meeting the defined program standards.

- **Air-Source Heat Pump Incentive Program**

The primary targets for this program are retail members building new homes in areas where natural gas heat is an option. An important secondary target is the HVAC retrofit market, offering incentives to retail members to replace electric furnaces and gas or propane heat with high-efficiency electric heat pumps. Incentives are available for either new homes or retrofits.

- **Button-Up Weatherization Program**

This program requires the installation of insulation materials or the use of other weatherization techniques to reduce heat loss in the home. Any retail member living in a stick-built or manufactured home that is at least two years old, and which uses electric as the primary source of heat, is eligible. The primary program targets for this program are older homes exhibiting unusually high usage of electricity.

- **Touchstone Energy Manufactured Home Program**

This program was approved by the Commission in 2002 as a demand-side management program and provides an incentive for retail customers to purchase a more energy efficient manufactured home. The retail customer pays an additional estimated amount of \$1,000 for a more energy efficient manufactured home – the home uses around 5,100 kWh less per year relative to other manufactured homes. The tariff sheet for this program is included in Attachment 1.

- **Touchstone Energy Home Program**

This program was approved by the Commission in 2003 as a demand-side management program. It provides an incentive to encourage customers to purchase a more energy-efficient home – one that meets the Department of Energy’s Energy Star standards. The tariff sheet for this program is included in Attachment 1.

- **Direct Load Control of Air Conditioners and Water Heaters**

On January 30, 2006, EKPC filed with the Commission for approval of a direct load control demonstration project. EKPC has requested that 400 load control switches be installed on Air Conditioning units for Blue Grass Energy customers and 400 load control switches on Water Heaters at Blue Grass Energy. In addition, EKPC is requesting that 300 switches be installed on Water Heaters at Big Sandy RECC. This project is scheduled to begin in the summer of 2006 and continue through the fall of 2007. Commission approval is pending.

Load Impacts of DSM Programs

Existing:

Electric Thermal Storage Program

*(negative value = reduction in load)*

| Year | Participants | Impact on Total Requirements (MWh) | Impact on Winter Peak (MW) | Impact on Summer Peak (MW) |
|------|--------------|------------------------------------|----------------------------|----------------------------|
| 1995 | 1,885        | 12,131                             | -6.9                       | 0.0                        |
| 1996 | 2,950        | 18,981                             | -10.8                      | 0.0                        |
| 1997 | 4,032        | 25,933                             | -14.7                      | 0.0                        |
| 1998 | 4,602        | 29,595                             | -16.8                      | 0.0                        |
| 1999 | 5,038        | 32,396                             | -18.4                      | 0.0                        |
| 2000 | 5,579        | 35,879                             | -20.3                      | 0.0                        |
| 2001 | 5,908        | 38,000                             | -21.5                      | 0.0                        |
| 2002 | 6,142        | 39,503                             | -22.4                      | 0.0                        |
| 2003 | 6,347        | 40,827                             | -23.1                      | 0.0                        |
| 2004 | 6,479        | 41,675                             | -23.6                      | 0.0                        |
| 2005 | 6,723        | 43,242                             | -24.5                      | 0.0                        |
| 2006 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2007 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2008 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2009 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2010 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2011 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2012 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2013 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2014 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2015 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2016 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2017 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2018 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2019 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2020 | 6,973        | 44,906                             | -25.4                      | 0.0                        |
| 2021 | 6,973        | 44,906                             | -25.4                      | 0.0                        |

Electric Water Heater Program

*(negative value = reduction in load)*

| Year | Participants | Impact on Total Requirements (MWh) | Impact on Winter Peak (MW) | Impact on Summer Peak (MW) |
|------|--------------|------------------------------------|----------------------------|----------------------------|
| 1995 | 1,003        | 101                                | 0.0                        | 0.0                        |
| 1996 | 1,622        | 166                                | 0.0                        | 0.0                        |
| 1997 | 2,596        | 264                                | 0.1                        | 0.0                        |
| 1998 | 3,479        | 353                                | 0.1                        | 0.0                        |
| 1999 | 4,428        | 452                                | 0.1                        | 0.0                        |
| 2000 | 5,216        | 534                                | 0.1                        | 0.0                        |
| 2001 | 5,972        | 614                                | 0.1                        | 0.1                        |
| 2002 | 6,855        | 703                                | 0.2                        | 0.1                        |
| 2003 | 7,731        | 796                                | 0.2                        | 0.1                        |
| 2004 | 8,417        | 861                                | 0.2                        | 0.1                        |
| 2005 | 9,095        | 927                                | 0.2                        | 0.1                        |
|      |              |                                    |                            |                            |
| 2006 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2007 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2008 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2009 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2010 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2011 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2012 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2013 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2014 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2015 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2016 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2017 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2018 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2019 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2020 | 9,785        | 854                                | 0.2                        | 0.1                        |
| 2021 | 9,785        | 854                                | 0.2                        | 0.1                        |

Geothermal Heating & Cooling Program

*(negative value = reduction in load)*

| Year | Participants | Impact on Total Requirements (MWh) | Impact on Winter Peak (MW) | Impact on Summer Peak (MW) |
|------|--------------|------------------------------------|----------------------------|----------------------------|
| 1995 | 1,544        | -4,480                             | -7.4                       | -1.6                       |
| 1996 | 1,941        | -5,632                             | -9.3                       | -2.0                       |
| 1997 | 2,416        | -7,010                             | -11.5                      | -2.4                       |
| 1998 | 2,824        | -8,194                             | -13.5                      | -2.9                       |
| 1999 | 3,221        | -9,346                             | -15.4                      | -3.3                       |
| 2000 | 3,582        | -10,394                            | -17.1                      | -3.6                       |
| 2001 | 3,954        | -11,473                            | -18.9                      | -4.0                       |
| 2002 | 4,261        | -12,364                            | -20.4                      | -4.3                       |
| 2003 | 4,451        | -12,915                            | -21.3                      | -4.5                       |
| 2004 | 4,608        | -13,371                            | -22.0                      | -4.7                       |
| 2005 | 4,752        | -13,789                            | -22.7                      | -4.8                       |
|      |              |                                    |                            |                            |
| 2006 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2007 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2008 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2009 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2010 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2011 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2012 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2013 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2014 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2015 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2016 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2017 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2018 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2019 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2020 | 4,902        | -14,224                            | -23.4                      | -5.0                       |
| 2021 | 4,902        | -14,224                            | -23.4                      | -5.0                       |

Air Source Heat Pump Program

(negative value = reduction in load)

| Year | Participants | Impact on Total Requirements (MWh) | Impact on Winter Peak (MW) | Impact on Summer Peak (MW) |
|------|--------------|------------------------------------|----------------------------|----------------------------|
| 1995 | 161          | 129                                | 0.4                        | -0.1                       |
| 1996 | 204          | 163                                | 0.5                        | -0.1                       |
| 1997 | 260          | 208                                | 0.6                        | -0.1                       |
| 1998 | 344          | 275                                | 0.8                        | -0.1                       |
| 1999 | 688          | 549                                | 1.6                        | -0.2                       |
| 2000 | 1,077        | 858                                | 2.6                        | -0.3                       |
| 2001 | 1,547        | 1,232                              | 3.7                        | -0.5                       |
| 2002 | 2,117        | 1,684                              | 5.0                        | -0.7                       |
| 2003 | 2,763        | 2,198                              | 6.6                        | -0.9                       |
| 2004 | 3,579        | 2,846                              | 8.5                        | -1.1                       |
| 2005 | 4,094        | 3,256                              | 9.7                        | -1.3                       |
|      |              |                                    |                            |                            |
| 2006 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2007 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2008 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2009 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2010 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2011 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2012 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2013 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2014 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2015 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2016 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2017 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2018 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2019 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2020 | 4,754        | 3,783                              | 11.3                       | -1.5                       |
| 2021 | 4,754        | 3,783                              | 11.3                       | -1.5                       |

Tune-Up HVAC Maintenance Program

*(negative value = reduction in load)*

| Year | Participants | Impact on Total Requirements (MWh) | Impact on Winter Peak (MW) | Impact on Summer Peak (MW) |
|------|--------------|------------------------------------|----------------------------|----------------------------|
| 1995 | 494          | -729                               | -0.6                       | -0.2                       |
| 1996 | 1,428        | -2,108                             | -1.6                       | -0.6                       |
| 1997 | 2,068        | -3,052                             | -2.4                       | -0.9                       |
| 1998 | 2,341        | -3,455                             | -2.7                       | -1.0                       |
| 1999 | 2,455        | -3,623                             | -2.8                       | -1.1                       |
| 2000 | 2,584        | -3,814                             | -2.9                       | -1.1                       |
| 2001 | 2,686        | -3,964                             | -3.1                       | -1.2                       |
| 2002 | 2,860        | -4,221                             | -3.3                       | -1.3                       |
| 2003 | 3,198        | -4,720                             | -3.6                       | -1.4                       |
| 2004 | 3,706        | -5,470                             | -4.2                       | -1.6                       |
| 2005 | 4,037        | -5,958                             | -4.6                       | -1.8                       |
|      |              |                                    |                            |                            |
| 2006 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2007 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2008 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2009 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2010 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2011 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2012 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2013 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2014 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2015 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2016 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2017 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2018 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2019 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2020 | 4,387        | -6,467                             | -5.0                       | -1.9                       |
| 2021 | 4,387        | -6,467                             | -5.0                       | -1.9                       |

Button-Up Weatherization Program

(negative value = reduction in load)

| Year | Participants | Impact on Total Requirements (MWh) | Impact on Winter Peak (MW) | Impact on Summer Peak (MW) |
|------|--------------|------------------------------------|----------------------------|----------------------------|
| 1995 | 1,559        | -4,084                             | -3.2                       | -1.2                       |
| 1996 | 2,640        | -6,916                             | -5.3                       | -2.1                       |
| 1997 | 3,515        | -9,208                             | -7.1                       | -2.8                       |
| 1998 | 4,210        | -11,029                            | -8.5                       | -3.3                       |
| 1999 | 4,691        | -12,289                            | -9.5                       | -3.7                       |
| 2000 | 5,218        | -13,670                            | -10.6                      | -4.1                       |
| 2001 | 5,696        | -14,922                            | -11.5                      | -4.5                       |
| 2002 | 6,174        | -16,174                            | -12.5                      | -4.9                       |
| 2003 | 6,670        | -17,474                            | -13.5                      | -5.2                       |
| 2004 | 7,167        | -18,776                            | -14.5                      | -5.6                       |
| 2005 | 7,585        | -19,871                            | -15.4                      | -6.0                       |
|      |              |                                    |                            |                            |
| 2006 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2007 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2008 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2009 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2010 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2011 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2012 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2013 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2014 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2015 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2016 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2017 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2018 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2019 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2020 | 8,085        | -21,181                            | -16.4                      | -6.4                       |
| 2021 | 8,085        | -21,181                            | -16.4                      | -6.4                       |

Touchstone Energy Heat Pump Home

(negative value = reduction in load)

| Year | Participants | Impact on Total Requirements (MWh) | Impact on Winter Peak (MW) | Impact on Summer Peak (MW) |
|------|--------------|------------------------------------|----------------------------|----------------------------|
| 2006 | 100          | -238                               | -0.2                       | -0.1                       |
| 2007 | 200          | -476                               | -0.3                       | -0.1                       |
| 2008 | 300          | -713                               | -0.5                       | -0.2                       |
| 2009 | 400          | -951                               | -0.6                       | -0.3                       |
| 2010 | 500          | -1,189                             | -0.7                       | -0.3                       |
| 2011 | 600          | -1,427                             | -0.8                       | -0.4                       |
| 2012 | 700          | -1,665                             | -1.0                       | -0.5                       |
| 2013 | 800          | -1,903                             | -1.1                       | -0.5                       |
| 2014 | 900          | -2,140                             | -1.2                       | -0.6                       |
| 2015 | 1,000        | -2,378                             | -1.4                       | -0.6                       |
| 2016 | 1,000        | -2,378                             | -1.4                       | -0.6                       |
| 2017 | 1,000        | -2,378                             | -1.4                       | -0.6                       |
| 2018 | 1,000        | -2,378                             | -1.4                       | -0.6                       |
| 2019 | 1,000        | -2,378                             | -1.4                       | -0.6                       |
| 2020 | 1,000        | -2,378                             | -1.4                       | -0.6                       |
| 2021 | 1,000        | -2,378                             | -1.4                       | -0.6                       |

Touchstone Energy Manufactured Home

(negative value = reduction in load)

| Year | Participants | Impact on Total Requirements (MWh) | Impact on Winter Peak (MW) | Impact on Summer Peak (MW) |
|------|--------------|------------------------------------|----------------------------|----------------------------|
| 2006 | 10           | -56                                | 0.0                        | 0.0                        |
| 2007 | 20           | -112                               | -0.1                       | 0.0                        |
| 2008 | 30           | -169                               | -0.1                       | 0.0                        |
| 2009 | 40           | -225                               | -0.1                       | 0.0                        |
| 2010 | 50           | -281                               | -0.2                       | -0.1                       |
| 2011 | 60           | -337                               | -0.2                       | -0.1                       |
| 2012 | 70           | -393                               | -0.2                       | -0.1                       |
| 2013 | 80           | -450                               | -0.3                       | -0.1                       |
| 2014 | 90           | -506                               | -0.3                       | -0.1                       |
| 2015 | 100          | -562                               | -0.3                       | -0.1                       |
| 2016 | 100          | -562                               | -0.3                       | -0.1                       |
| 2017 | 100          | -562                               | -0.3                       | -0.1                       |
| 2018 | 100          | -562                               | -0.3                       | -0.1                       |
| 2019 | 100          | -562                               | -0.3                       | -0.1                       |
| 2020 | 100          | -562                               | -0.3                       | -0.1                       |
| 2021 | 100          | -562                               | -0.3                       | -0.1                       |

Direct Load Control for Air Conditioners and Water Heaters

*(negative value = reduction in load)*

| Year | Participants | Impact on Total Requirements (MWh) | Impact on Winter Peak (MW) | Impact on Summer Peak (MW) |
|------|--------------|------------------------------------|----------------------------|----------------------------|
| 2006 | 5,000        | -76                                | -5.6                       | -7.6                       |
| 2007 | 10,000       | -153                               | -11.3                      | -15.3                      |
| 2008 | 15,000       | -229                               | -16.9                      | -22.9                      |
| 2009 | 20,000       | -305                               | -22.5                      | -30.5                      |
| 2010 | 25,000       | -381                               | -28.1                      | -38.2                      |
| 2011 | 30,000       | -458                               | -33.8                      | -45.8                      |
| 2012 | 35,000       | -534                               | -39.4                      | -53.4                      |
| 2013 | 40,000       | -610                               | -45.0                      | -61.0                      |
| 2014 | 45,000       | -686                               | -50.7                      | -68.7                      |
| 2015 | 50,000       | -763                               | -56.3                      | -76.3                      |
| 2016 | 50,000       | -763                               | -56.3                      | -76.3                      |
| 2017 | 50,000       | -763                               | -56.3                      | -76.3                      |
| 2018 | 50,000       | -763                               | -56.3                      | -76.3                      |
| 2019 | 50,000       | -763                               | -56.3                      | -76.3                      |
| 2020 | 50,000       | -763                               | -56.3                      | -76.3                      |
| 2021 | 50,000       | -763                               | -56.3                      | -76.3                      |



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**APPENDIX B**

**DATA REQUEST RESPONSE**

**COMMISSION STAFF'S DATA REQUEST DATED 11/20/07**

**REQUEST 5**

**RESPONSIBLE PERSON: James C. Lamb, Jr.**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 5.** Provide copies of any internal reports or utility-commissioned studies on the extent of untapped opportunities for additional demand-side management programs in Kentucky.

**Response 5.** Please see the attached list of possible demand-side management program alternatives. These were considered by EKPC during its most recent IRP and not included as a result of the screening process utilized at that time. In addition, attached on a CD is a document entitled "Midwest Residential Market Assessment and DSM Potential Study", March 2006. This study was commissioned by the Midwest Energy Efficiency Alliance and is being provided as an additional source of information.

## Complete List of DSM Measures

### Residential

|    |   |
|----|---|
| 1  | Button-Up                                   |
| 2  | Tune-Up                                     |
| 3  | Geothermal Touchstone Energy Home           |
| 4  | Geothermal Heat Pump                        |
| 5  | Air Source Heat Pump Touchstone Energy Home |
| 6  | Air Source Heat Pump Retrofit               |
| 7  | Air Source Heat Pump New construction       |
| 8  | Water heater - new construction             |
| 9  | Water heater – retrofit                     |
| 10 | Electric Thermal Storage – Furnace          |
| 11 | Electric Thermal Storage – Propane          |
| 12 | Touchstone Energy Manufactured Home Program |
| 13 | Compact Fluorescent Lighting                |
| 14 | Direct Load Control - air conditioners      |
| 15 | Direct Load Control - water heaters         |
| 16 | Dual fuel heating                           |
| 17 | Cold climate heat pump                      |
| 18 | High efficiency furnace fan motors          |
| 19 | Low income weatherization                   |
| 20 | Ceiling Fans                                |
| 21 | Programmable thermostats                    |
| 22 | Polarized Refrigerant oxidant agent         |
| 23 | ENERGY STAR Refrigerator                    |
| 24 | ENERGY STAR Room Air Conditioner            |
| 25 | ENERGY STAR Clothes Washers                 |
| 26 | ENERGY STAR Central Air Conditioner         |
| 27 | ENERGY STAR Dishwashers                     |
| 28 | Refrigerator/Freezer Recycling              |
| 29 | Efficient pool pump                         |
| 30 | Well water pump                             |
| 31 | High efficiency outdoor lighting            |
| 32 | Direct load control - pool pump             |
| 33 | Direct load control - smart thermostat      |
| 34 | Multi-family program                        |
| 35 | Mobile home program                         |
| 36 | Time of use rates                           |
| 37 | Inclining block rates                       |
| 38 | Passive Solar (new construction)            |
| 39 | Solar water heater                          |
| 40 | Photovoltaics                               |
| 41 | Wind turbine                                |

**Commercial**

|    |  |
|----|--|
| 1  | Commercial Lighting                    |
| 2  | Demand Response                        |
| 3  | Commercial HVAC                        |
| 4  | Geothermal heat pump                   |
| 5  | Cool roof program                      |
| 6  | High performance glazings              |
| 7  | Heat pump & A.C. Tune-up               |
| 8  | Duct sealing                           |
| 9  | Polarized Refrigerant Oxidant Agent    |
| 10 | Efficient refrigeration equipment      |
| 11 | Efficient cooking equipment            |
| 12 | Efficient clothes washers              |
| 13 | ENERGY STAR Vending machines           |
| 14 | LED exit signs                         |
| 15 | Energy Management Systems              |
| 16 | DLC of irrigation pumps                |
| 17 | DLC of central air conditioners        |
| 18 | Thermal energy storage                 |
| 19 | Commercial New Construction            |
| 20 | Energy efficient schools               |
| 21 | Retro-commissioning                    |
| 22 | Farms program: fans, pumps, irrigation |
| 23 | Time of use rates                      |
| 24 | Combined heat & power                  |
| 25 | Stand-by generation program            |
| 26 | Daylighting                            |
| 27 | Solar hot water                        |
| 28 | Photovoltaics                          |
| 29 | Wind turbine                           |

**Industrial/Other**

|    |   |
|----|---|
| 1  | Demand Response                                       |
| 2  | Motors  |
| 3  | Variable speed drives                                 |
| 4  | Compressed air  |
| 5  | Industrial process                                    |
| 6  | Process cooling                                       |
| 7  | Refrigerated Warehouse                                |
| 8  | High efficiency transformers                          |
| 9  | Automotive and transportation sector equipment        |
| 10 | Livestock, equine, poultry and meat processing sector |
| 11 | Chemicals sector                                      |
| 12 | Machinery/machine tools sector                        |
| 13 | Aluminum sector                                       |
| 14 | Plastics sector                                       |
| 15 | Computer and electronics sector                       |
| 16 | Interruptible Rates                                   |
| 17 | Combined heat and power                               |
| 18 | Other onsite generation (conventional)                |
| 19 | Photovoltaics   |
| 20 | Wind turbine  |
| 21 | LED Traffic signals                                   |
| 22 | Water/Wastewater Treatment facilities                 |
| 23 | Conservation Voltage Reduction                        |



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**REQUEST 6**

**RESPONSIBLE PERSON: James C. Lamb, Jr./William A. Bosta**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 6.** Provide copies of any research materials, industry publications, investment banking or rating agency reports, in your possession, that relate to the following issues under review in this investigation:

**Request 6a.** Considerations for utility adoption of cost-effective demand-management strategies.

**Response 6a.** The following documents are provided on the enclosed CD.

(1) "Using Rate Design to Promote Energy Efficiency", EPA, March 2006. [http://www.epa.gov/cleanenergy/pdf/eeap\\_rates.pdf](http://www.epa.gov/cleanenergy/pdf/eeap_rates.pdf)

(2) "Energy Efficiency Policy Toolkit", Regulatory Assistance Project, January 2007.

[http://www.raonline.org/Pubs/Efficiency\\_Policy\\_Toolkit\\_1\\_04\\_07.pdf](http://www.raonline.org/Pubs/Efficiency_Policy_Toolkit_1_04_07.pdf)

(3) "Electric cooperatives and Energy Efficiency: A Snapshot", NRECA, 2006. <http://www.nreca.org/Documents/PublicPolicy/EEFlyer.pdf>

(4) “National Action Plan for Energy Efficiency”, EPA and US DOE. <http://www.epa.gov/cleanenergy/actionplan/resources.htm#resource>

**Request 6b.** Diversification of utility energy portfolios through the use of renewables and distributed generation.

**Response 6b.** EKPC is providing the following documents on a CD.

- (1) NRECA: *NRECA White Paper on Renewable Energy* (107 pages)
- (2) NRECA/CRN: *Renewable Power Technology Guide 2006* (59 pages)
- (3) NRECA: *White Paper on Distributed Generation* (37 pages)
- (4) NRECA: *Comments of the National Rural Electric Cooperative Association in Response to the Notice of Inquiry and Request for Public Comment of the Study of the Potential Benefits of Distributed Generation* (7 pages)

**Request 6c.** Variables and methodologies to consider full-cost accounting of strategies for consideration of alternatives in meeting future energy demand.

**Response 6c.** EKPC is not aware of any research materials or industry publications issued relating to variables and methodologies to consider full-cost accounting concepts for meeting future energy demand.

**Request 6d.** Rate structure and cost recovery options to mitigate adverse financial impacts of alternative energy option.

**Response 6d.** EKPC is providing the following documents on a CD.

- (1) EPRI: *Assessment of California Combined Heat and Power (CHP) Markets and Policy Options for Increased Penetration* (194 pages)
- (2) EPRI: *Electricity Pricing Lessons from the Front* (52 pages)
- (3) EPRI: *Economic Costs and Benefits of Distributed Energy Resources* (68 pages)
- (4) EII: *A Framework for Developing Collaborative DER Program: Working Tools for Stakeholders* (154 pages)
- (5) EPRI: *Distributed Energy Resources: Current Landscape and a Roadmap for the Future* (50 pages)
- (6) EPRI: *Energy Efficiency Initiative* (35 pages)
- (7) EPRI: *Performance-Based Regulation for Distribution Utilities* (46 pages)

**Request 6e.** The need for and type of financial incentives for a utility to provide energy efficiency and lowest alternative generation/DSM options to customers.

**Response 6e.** The following documents are being provided on the enclosed CD.

- (1) “Aligning Utility Incentives with Investment in Energy Efficiency”, EPA, November 2007. <http://www.epa.gov/cleanenergy/pdf/incentives.pdf>
- (2) “State and Regional Policies that Promote Energy Efficiency Programs Carried Out by Electric and Gas Utilities”, EPA, March 2007.



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**REQUEST 7**

**RESPONSIBLE PERSON: James C. Lamb, Jr.**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 7.** Identify the person having primary responsibility for the utility resource plan.

**Response 7.** James C. Lamb, Jr., Senior Vice President of Power Supply.



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**REQUEST 8**

**RESPONSIBLE PERSON: James C. Lamb, Jr.**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 8.** Identify the person or persons having primary responsibility for the utility financial forecasts and strategic plan or strategic planning documents.

**Response 8.** James C. Lamb, Jr., Senior Vice President of Power Supply.



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**REQUEST 9**

**RESPONSIBLE PERSON: John R. Twitchell**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 9.** Identify the person or persons within the utility having primary responsibilities for siting new generation.

**Response 9.** John R. Twitchell, Senior Vice President G&T Operations.



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**REQUEST 10**

**RESPONSIBLE PERSON: James C. Lamb, Jr.**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 10.** Identify the person or persons within the utility having the primary responsibility for conservation, energy efficiency, and demand-side management programs.

**Response 10.** James C. Lamb, Jr., Senior Vice President of Power Supply.



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**REQUEST 11**

**RESPONSIBLE PERSON: James C. Lamb, Jr./William A. Bosta**

**COMPANY: East Kentucky Power Cooperative, Inc.**

**Request 11.** Identify and discuss all portions of the utility's current integrated resource plan which discuss future plans for implementation of demand-side management, renewable energy resources, and energy efficiency.

**Response 11.** Please see the attached information from EKPC's most recent IRP filing.

**Table DSM-6**  
**New Programs** (not already in place at projected levels)

| Program Name   | Class       | Coin. Peak Demand Savings in 2015 (MW) <sup>5</sup> | Total Resource Cost Test Benefit/Cost Ratio | Participant Test Benefit/Cost Ratio |
|--|-------------|---|---|-------------------------------------|
| Compact Fluorescent Lighting                               | Residential | -4.1  | 21.47                                       | Infinite                            |
| Touchstone Energy Geothermal Heat Pump Home                | Residential | -3.4  | 4.68  | 1.36                                |
| Touchstone Energy Air Source Heat Pump Home                | Residential | -1.4  | 1.65  | 0.84                                |
| Touchstone Energy Manufactured Home                        | Residential | -0.3  | 5.75  | 3.34                                |
| Direct Load Control for Air Conditioners and Water Heaters | Residential | -56.3   | 5.16  | Infinite                            |
| ENERGY STAR Clothes Washer                                 | Residential | -0.4  | 1.87  | 1.53                                |
| ENERGY STAR Room Air Conditioner                           | Residential | 0.0   | 1.73  | 1.09                                |
| ENERGY STAR Refrigerator                                   | Residential | -0.1  | 1.78  | 2.19                                |
| Programmable Thermostat with Electric Furnace Retrofit     | Residential | 0.0   | 4.77  | 5.34                                |
| Dual Fuel Air Source Heat Pump with Propane Retrofit       | Residential | 0.0   | 2.31  | 1.7                                 |
| Commercial Lighting  | Commercial  | -3.0  | 2.55  | 2.25                                |
| C&I Demand Response  | Commercial  | -19.1   | 6.06  | 3.23                                |
| Commercial Efficient HVAC                                  | Commercial  | -0.2  | 2.37  | 1.81                                |
| Commercial Building Performance                            | Commercial  | -0.9  | 1.48  | 1.69                                |
| Commercial New Construction                                | Commercial  | -0.8  | 1.89  | 1.64                                |
| Commercial Efficient Refrigeration                         | Commercial  | -0.5  | 4.31  | 4.04                                |
| Industrial Premium Motors                                  | Industrial  | -0.5  | 4.75  | 3.83                                |
| Industrial Variable Speed Drives                           | Industrial  | -3.0  | 5.04  | 4.19                                |
|  |             |   |   |                                     |

These new programs are projected to produce over \$150 million of net benefits (2006 \$) on a total resource basis over the lifetime of the cost-effectiveness study (20 years). They will require an investment of just under \$50 million (2006 \$) by EKPC, its member cooperatives, and participating customers in order to produce these savings.

<sup>5</sup>Negative value means a reduction in load requirements.

DSM program design and implementation are complex and dynamic undertakings. It is possible that DSM programs that are selected through this evaluation process may not be implemented as they have been described in this document. DSM programs that are ultimately launched will first be subjected to a much more rigorous program design effort. In certain cases, a demonstration or pilot project may precede full-scale implementation to test the validity of the program concept. This could mean that certain program concepts are modified, and some may not ultimately be implemented.

**Table 8.(2)(b)-3  
Industrial/Other**

|    |   |
|----|---|
| 1  | Demand Response                                       |
| 2  | Motors  |
| 3  | Variable speed drives                                 |
| 4  | Compressed air  |
| 5  | Industrial process                                    |
| 6  | Process cooling                                       |
| 7  | Refrigerated Warehouse                                |
| 8  | High efficiency transformers                          |
| 9  | Automotive and transportation sector equipment        |
| 10 | Livestock, equine, poultry and meat processing sector |
| 11 | Chemicals sector                                      |
| 12 | Machinery/machine tools sector                        |
| 13 | Aluminum sector                                       |
| 14 | Plastics sector                                       |
| 15 | Computer and electronics sector                       |
| 16 | Interruptible Rates                                   |
| 17 | Combined heat and power                               |
| 18 | Other onsite generation (conventional)                |
| 19 | Photovoltaics   |
| 20 | Wind turbine  |
| 21 | LED Traffic signals                                   |
| 22 | Water/Wastewater Treatment facilities                 |
| 23 | Conservation Voltage Reduction                        |

Additional detail on the evaluation of DSM resources for inclusion in this 2006 Integrated Resource Plan (IRP) is contained in the report titled *Demand-Side Management Analysis*, which can be found in the *Technical Appendix*.

**8.(2)(c) Expansion of generating facilities, including assessment of economic opportunities for coordination with other utilities in constructing and operating new units;**

EKPC issued RFP 2004-01 in April 2004 to evaluate resource options to meet capacity needs through approximately the 2010 timeframe. The RFP included the capacity needs of Warren RECC, a distribution cooperative expected to join the EKPC system on April 1, 2008. As a result of RFP 2004-01, EKPC filed for certificates of public convenience and necessity and site compatibility for a new 278 MW circulating fluidized bed coal-fired unit at Spurlock Station (Spurlock 4), and a new 278 MW circulating fluidized bed coal-fired unit at Smith Station (Smith 1) and five of the new GE LMS100 combustion turbines, also at Smith Station (Smith CTs 8-12). EKPC filed for the certificates for Spurlock 4 on October 28, 2004 (PSC Case No. 2004-00423), and for the certificates for the Smith capacity on January 31, 2005 (PSC Case No. 2005-00053). The PSC approved

Case No. 2004-00423 on September 13, 2005, and Case No. 2005-00053 on August 29, 2006. Details of the evaluation process and specific RFP results can be found in the various filings associated with these two cases.

Following is a discussion and listing of resource alternatives considered in this integrated resource plan. The following resources were included in the optimization model for consideration:

Table 8.(2)(c)

| Resource                             | Capacity Type         | Capacity (MW) | Primary Fuel | Projected Capital Cost (2007\$) |                |
|--------------------------------------|-----------------------|---------------|--------------|---------------------------------|----------------|
|                                      |                       |               |              | \$/kW                           | \$M            |
| Circulating Fluidized Bed (Smith 2)  | Baseload              | 278           | Coal         | [REDACTED]                      | [REDACTED]     |
| Circulating Fluidized Bed (New Site) | Baseload              | 278           | Coal         |                                 |                |
| Subcritical Pulverized Coal          | Baseload              | 325           | Coal         |                                 |                |
| Unit Power Purchase                  | Baseload              | 100           | Coal         | Not Applicable                  | Not Applicable |
| LMS100 CT                            | Peaking               | 97            | Natural Gas  | [REDACTED]                      | [REDACTED]     |
| LMS100 CT-with Steam Injection       | Peaking/ Intermediate | 109           | Natural Gas  |                                 |                |

Other power supply resources that were considered but not explicitly modeled were supercritical pulverized coal units, coal-gasification units, hydropower, windpower, and landfill gas to energy projects. EKPC is currently utilizing the circulating fluidized bed technology to take advantage of lower quality, lower cost coals. In the future EKPC will do a more detailed evaluation of supercritical coal units to determine their suitability for meeting EKPC's capacity needs.

Integrated Gasification Combined Cycle (IGCC) technology has received a lot of attention in recent years. All indications are that this technology will work for electric generation. The interest in this technology has grown with the announcements by AEP and Duke Energy to build GE/Bechtel type IGCC plants. However, it is expected that both of those companies will utilize significant federal and state incentives to offset the higher financial cost and risk of IGCC. Several groups have developed partnerships (suppliers and utilities) to improve the design of IGCC plants. Designs have improved

and costs have come down for IGCC equipment and processes. However, the rise in labor and steel costs has more than offset design cost savings.

EKPC has evaluated several Ohio River hydro projects in the past and sees value in run of river projects. Those projects were evaluated in RFP No. 2004-01 but have not been re-evaluated recently. EKPC currently purchases the output of the Greenup Hydro project from Duke Energy.

In 2002 EKPC commissioned a study to determine whether the mountains in southeastern Kentucky offered a viable source of wind power that could become a cost effective alternative to be included in EKPC's renewable portfolio. The initial Site Screening and Selection Study was done by AWS Scientific (AWS) of Albany, New York, recognized within the renewable power industry as one of the leading experts around the world in wind assessment studies. AWS used existing topographic data and airport wind collection information to identify fifteen sites in Kentucky where wind speed and availability could potentially support economical wind turbine activity and used certain evaluation criteria such as transmission proximity, land use conflicts, visual impact, and site accessibility to evaluate those sites. A total of ten sites were visited in February 2002 to assess their viability. Based on the rating scale already developed, these sites were ranked for their development potential. The USDOE and the Kentucky Division of Energy (KDOE) provided financial assistance to conduct the original study. EKPC selected two initial test sites and in December 2002, erected 50-meter test towers with anemometers on these sites. USDOE provided additional financial assistance to help pay for the subsequent data collection. Readings were taken from the sites for up to twelve months to see if the sites were feasible for wind energy development. Subsequently, the two sites were re-deployed and a third site was added. At this time, data continues to be collected from these three sites. The study indicated that there is potential for wind energy development. However, the area studied is now part of an environmentally sensitive area and it is unclear if windpower development can move forward in this area.

EKPC currently has an ongoing program to develop landfill gas to energy projects. The capacity of the four existing plants is 12MW, and an additional 3.2MW is currently under construction and expected to be operational by February 2007. EKPC's long range plan is to develop as much as 50MW of this type of renewable resource.

EKPC is required by the Rural Utilities Service to undergo an RFP process to evaluate capacity resources to meet future needs. EKPC has used this process successfully for a number of years and plans to continue to use the RFP process. The RFP allows both utility and non-utility generators or developers to propose capacity resources to EKPC of a variety of technologies and quantities of capacity. EKPC will evaluate those proposals as set forth in the RFP. The evaluation is based on economics, reliability, maturity of technology, and risk associated with the proposal.